AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-39. (Cancelled)

40. (Currently Amended) A hydrogel composition comprising:

a first ~~portion~~ layer which comprises a flexible plasticized hydrophilic polymer matrix comprising a porous foam having an internal cellular structure, and

a second ~~portion~~ layer which comprises a flexible plasticized hydrophilic polymer matrix having relatively continuous internal structure,

wherein the first layer has a volume ratio of cell void to matrix greater than about 1:3; and

wherein the second layer has a volume ratio of cell void to matrix less than about 1:10.

41. (Currently Amended) A hydrogel composition according to claim 40, wherein the first ~~portion~~ layer comprises a porous foam having an internal cellular structure such that the volume ratio of cell void to matrix is greater than about ~~1:3~~ 1:1.

42. (Currently Amended) A hydrogel composition according to claim 40, wherein the second ~~portion~~ layer has a volume ratio of cell void to matrix less than about ~~1:10~~ 1:20.

43. (Currently Amended) A process for the preparation of a porous hydrogel, which comprises ~~polymerising~~ polymerizing a ~~polymerisable~~ polymerizable mixture comprising a hydrophilic monomer and optionally one or more comonomer,

wherein the ~~polymerisable~~ polymerizable mixture comprises a first portion including a relatively high concentration of introduced gas bubbles, and a second portion including a relatively low concentration of gas bubbles.

wherein the first portion of the polymerizable mixture has a volume ratio of bubbles to mixture greater than 1:3; and

wherein the second portion of the polymerizable mixture has a volume ratio of bubbles to mixture of less than 1:10.

44. (Previously Presented) A process according to claim 43, comprising a first portion which comprises a flexible plasticized hydrophilic polymer matrix having an internal cellular structure, and a second portion which comprises a flexible plasticized hydrophilic polymer matrix having relatively continuous internal structure.

45. (Currently Amended) A process according to claim 43, wherein the ~~polymerisable~~ polymerizable mixture is laid down in sheet or layer form on a suitable support arrangement for the polymerization procedure, whereby the first portion of the ~~polymerisable~~ polymerizable mixture sits on the second portion.

46. (Currently Amended) ~~A porous hydrogel composition comprising a flexible plasticised hydrophilic polymer matrix having an internal cellular structure, wherein the hydrophilic polymer is selected from polymers~~ The hydrogel composition according to claim 40, wherein the flexible plasticized hydrophilic polymer matrix of the first and/or second portion comprises a polymer selected from a polymer of any of the following monomers:

- 2-acrylamido-2-methylpropane sulphonic acid or a substituted derivative or salt thereof;
- acrylic acid (3-sulphopropyl) ester or a substituted derivative or salt thereof;
- a non-ionic monomer containing an alkyl or alkylene or substituted alkyl or alkylene group linked to a carbon-carbon double bond via an amido or alkylamido function;
- any mixture of the foregoing with each other or with one or more comonomer;
- a monomer/comonomer pair consisting of a first monomer comprising one or more pendant anionic group and a second monomer comprising one or more pendant cationic group; and

- any mixture of the said monomer/comonomer pair with any of the foregoing.

47. (Previously Presented) A porous hydrogel composition according to claim 46, wherein the non-ionic monomer containing an alkyl or alkylene or substituted alkyl or alkylene group linked to a carbon-carbon double bond via an amido or alkylamido function is selected from diacetone acrylamide, a vinyl lactam, an N-alkylated acrylamide, and N,N-dialkylated acrylamide, N-vinyl pyrrolidone, N-acryloyl morpholine, and any mixture thereof.

48. (Currently Amended) ~~A porous~~ The hydrogel composition according to claim 46, wherein, in the monomer/comonomer pair consisting of a first monomer comprising one or more pendant anionic group and a second monomer comprising one or more pendant cationic group, the relative amounts of the said monomers in the pair are such that the anionic groups and the cationic groups are present in essentially equimolar quantities.

49. (Currently Amended) ~~A porous~~ The hydrogel composition according to claim 46, wherein the monomer is selected from 2-acrylamido-2-methylpropane ~~sulphonic~~ sulfonic acid or a salt thereof, ~~acrylic acid (3-sulphopropyl)~~ acrylic acid (3-sulfopropyl) ester or a salt thereof, and any mixture thereof.

50. (Currently Amended) ~~A porous~~ The hydrogel composition according to claim 47, wherein the non-ionic monomer is N-acryloyl morpholine.

51. (Currently Amended) ~~A porous~~ The hydrogel composition ~~as defined in~~ according to claim 46, comprising a ~~polymerisable~~ polymerizable mixture comprising a hydrophilic monomer selected from said monomers and monomer mixtures, wherein the ~~polymerisable~~ polymerizable mixture includes introduced gas bubbles.

52. (Currently Amended) A process for the preparation of a porous hydrogel composition, comprising ~~polymerising~~ polymerizing a ~~polymerisable~~ polymerizable mixture comprising a hydrophilic monomer and optionally one or more comonomer, wherein the ~~polymerisable~~ polymerizable mixture includes bubbles consisting predominantly of air, the bubbles having been introduced into the mixture under an atmosphere consisting predominantly of air, and the mixture having been laid down for the said ~~polymerisation~~ polymerization after introduction of the bubbles into the ~~polymerisable~~ polymerizable mixture but before ~~polymerisation~~ polymerization,

wherein the resultant porous hydrogel composition comprises a first portion which comprises a flexible plasticized hydrophilic polymer matrix having an internal cellular structure, and a second portion which comprises a flexible plasticized hydrophilic polymer matrix having relatively continuous internal structure.

53. (Cancelled)

54. (Currently Amended) A process according to claim 52, wherein the ~~polymerisable~~ polymerizable mixture has a bubble to mixture volume ratio greater than about 1:3.

55. (Currently Amended) A process according to claim 43, wherein the gassed (foamed) ~~polymerisable~~ polymerizable mixture is laid down prior to ~~polymerisation~~ polymerization in a way which comprises casting the gassed mixture into sheet form.

Claims 56-68. (Cancelled)

69. (Currently Amended) A process for the preparation of a hydrogel composition, which comprises preparing a porous hydrogel composition in sheet or layer form by ~~polymerising~~ polymerizing a ~~polymerisable~~ polymerizable mixture on a suitable support arrangement to obtain a porous hydrogel composition in sheet or layer form in which at least the upper face of the sheet or layer is porous, and applying to the porous upper face of the sheet or layer, while the sheet or layer is on the support arrangement on which it was ~~polymerised~~ polymerized, a liquid composition comprising the secondary

component of the hydrogel composition or a precursor thereof, followed by setting, curing or drying of the secondary component within the porous structure if desired; and

wherein the process is used for the preparation of a hydrogel composition comprising a first portion which comprises a flexible plasticized hydrophilic polymer matrix having an internal cellular structure, and a second portion which comprises a flexible plasticized hydrophilic polymer matrix having a relatively continuous internal structure, in which at least some of the cells contain one or more secondary hydrogel components.

70. (Previously Presented) A process according to claim 69, wherein the application of the liquid composition comprising the secondary component of the hydrogel composition or the precursor thereof takes place on the same day as the polymerisation to form the porous hydrogel material.

71. (Previously Presented) A process according to claim 69, wherein any subsequent desired setting, curing or drying takes place on the same day as the application of the liquid composition comprising the secondary component of the hydrogel composition or the precursor thereof.

72. (Previously Presented) A process according to claim 69, comprising a first portion which comprises a flexible plasticized hydrophilic polymer matrix having an internal cellular structure, and a second portion which comprises a flexible plasticized hydrophilic polymer matrix having relatively continuous internal structure,

in which at least some of the cells contain one or more secondary hydrogel component selected from electrolytes, pH regulators, colorants, chloride sources, bioactive compounds such as antimicrobials, antibiotics, antiseptics, haemostatic agents, wound healing agents, pharmaceuticals and drugs, burn healing agents, skin cooling agents, skin moisturizing agents, and skin warming agents, aroma agents, perfumes, fragrances, scents, polymers, and natural, synthetic and semi-synthetic gel materials.

Claims 73-80 (Cancelled).

81. (Currently Amended) A process for the preparation of a hydrogel structure comprising a porous hydrogel portion which comprises a flexible ~~plasticised~~ plasticized hydrophilic polymer matrix having a predominantly open-cell internal cellular structure, and a relatively non-porous further portion underlying the porous portion, wherein the porous hydrogel portion is in the form of a sheet or layer of thickness less than about 0.7mm,

the process comprising forming by admixture of the ingredients a polymerisable mixture comprising one or more monomer, a curing system for the monomer(s), at least one surfactant and at least one ~~plasticizer~~ plasticizer, the mixture including introduced gas bubbles, and polymerizing the ~~polymerisable~~ polymerizable mixture,

wherein during the forming of the ~~polymerisable~~ polymerizable mixture at least some of the ingredients are mixed together using a rotary mixer moving forward at a speed of more than about 500 rpm,

wherein the volume ratio of cell void to matrix in the porous hydrogel portion is greater than 1:3, and

wherein the volume ratio of cell void to matrix in the non-porous hydrogel portion is less than 1:10.

82. (Previously Presened) A process according to claim 81, comprising a first portion which comprises a flexible plasticized hydrophilic polymer matrix having an internal cellular structure, and a second portion which comprises a flexible plasticized hydrophilic polymer matrix having relatively continuous internal structure

83. (Previously Presented) A process according to claim 81, when used to prepare a water-absorbent structure comprising a porous hydrogel portion which comprises a flexible plasticized hydrophilic polymer matrix having a predominantly open-cell internal cellular structure, and a relatively non-porous further portion underlying the porous hydrogel portion, wherein the porous hydrogel portion comprises a sheet or layer of thickness less than about 0.7 mm.

84. (Currently Amended) A process according to 43, wherein at least one further monomer or other desired component or components of the hydrogel composition or water-absorbent structure or precursor thereof is added as a liquid to the ~~polymerisable~~ polymerizable mixture after it has been laid down on a suitable support arrangement and before ~~polymerisation~~ polymerization, the conditions being such that the at least one further monomer or other desired component or components or precursor percolates through an upper foam layer of the ~~polymerisable~~ polymerizable mixture and mixes preferentially into a relatively bubble-free layer of the ~~polymerisable~~ polymerizable mixture underlying the foam layer.

85. (New) A process according to claim 45, wherein an additional component is added to the polymerizable mixture by applying a liquid composition comprising the additional component to the upper surface of the first portion.